

FIG. 1

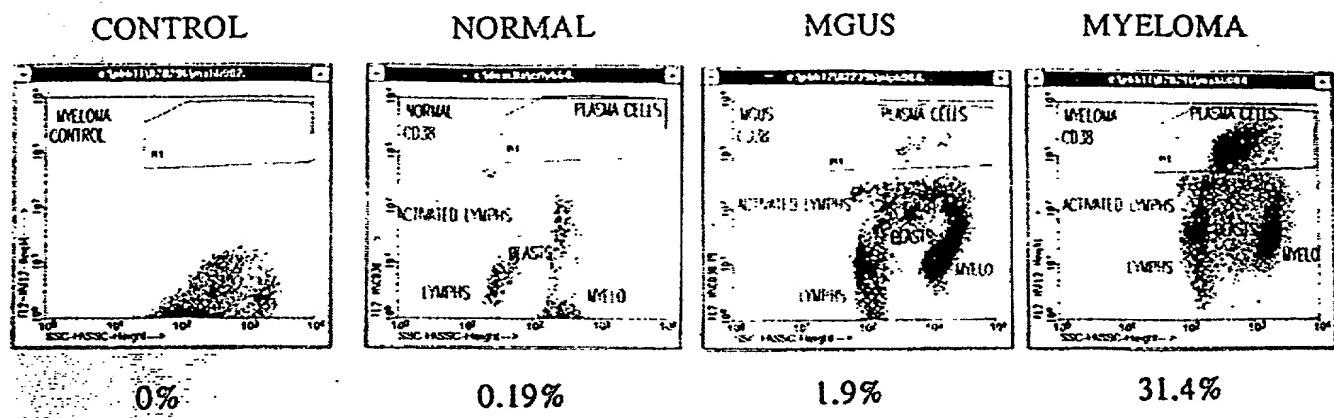
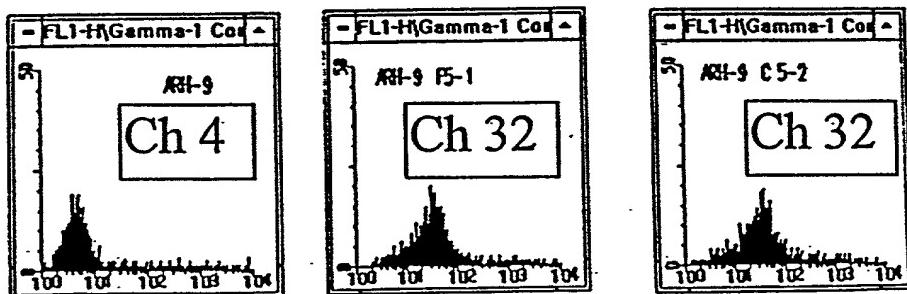


FIG. 2



15 min.
Control scFv
38+ 38-

FIG. 3

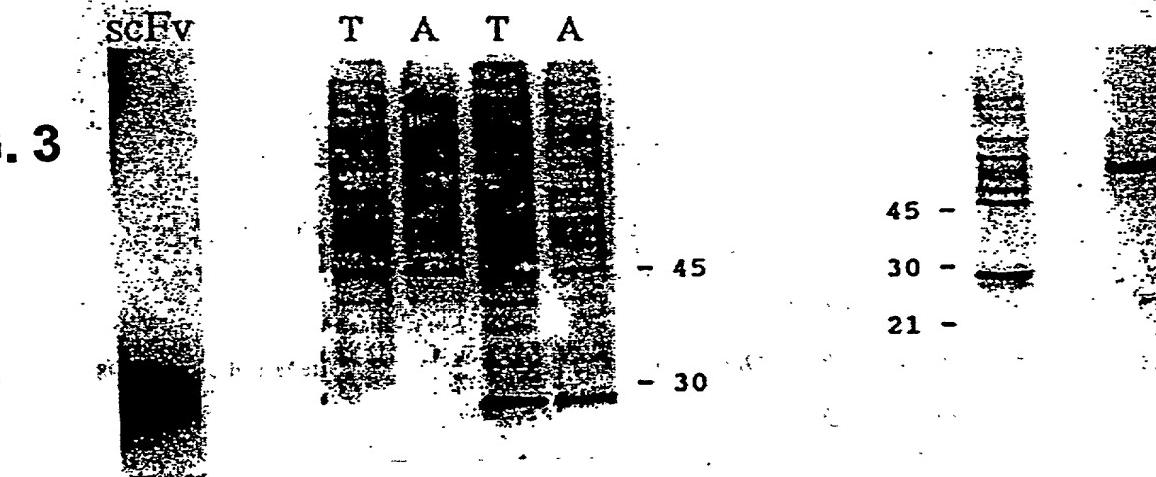


FIG. 4

ANTI-CD38 scFv

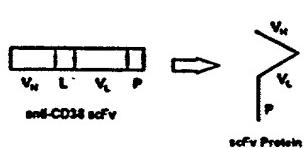


FIG. 5

ANTI-CD38 scFv

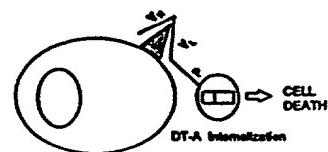


FIG. 6

FIG. 6 (con't)

TGTGACCCAAAGCGGTCAAGAGGTCTTCCCAGACCTCACCGACCCCTCACTATACCTCTCC

T L G S P V S R K G S G V A G S D M E R -
H W V R Q S P G K G L E W L G V I W R G -
T G F A S L O B R V W S G W E * Y G E V -

	N			B	S
CB C	1 B	H		B	S
vSTAv	aBs	HD i		ss	f
iosli	Ibp	pd n		at	a
RFeuJ	IVG	he 4		Jy	N
IIIII	III	II I		II	I

W K H R L Q C S F H V Q T E H H Q G Q L -
G S T D Y N A A F M S R L S I T K D N S -
E A Q T T M Q L S C P D * A S P R T T P -

C V I C T
MD sr ea II
C V I C C li II
Av s u J II
T S P R H

CAAGAGCCAAGTTTCTTTAAATGAACAGTCAGCTGCAAGCTGATGACACTGCCATATACTT

241 CCTGCGCCGCAAAAGAATGGTGTCTGCACGCTTGACTACTGTACGGTAATATGAA 300

Q E P S F L * N E Q S A S * * H C H I L -
K S Q V F F K M N S L Q A D D T A I Y F -
R A K F S L K * T V C K L M T L P Y T S -

B	C	S	H	S
S	v	a	CBaN	A NB Pa
C	i	B	uBvsels	vHlsDsu
G	J	f	9sialat	apaash9
I	I	i	6rJJIiy	IhIJaA6
		I	IIIIIVI	IIVIIII

301 CTGTGCCAAACCTGATTACGACGGCTATGCTATGGACTACTGGGCCAAGGGACCAC
360

L C Q N L D Y D G L C Y G L L G P R D H -
C A K T L I T T G Y A M D Y W G Q G T T -
V P K P * L R R A M L W T T G A K G P R -

BMT	B	B	S
Bsas	B	BBS	a
step	s	ssuDM	A
		M	D
		A	
		AE	
		M	
		C	
		v	
		A	
		AEu	

eEI4 m mm3dn n c nw cc w i c cc3 p
 RIIS F AB6el l i lo ii o J i iiA n
 IIII I IIIII . I I II II I I I III I
 !!! !!!!
 GGTCAACCGTCTCCTCAGGTGGAGGCGGTCAGGCGGAGGTGGCTCTGGCGGTGGCGGATC

FIG. 6 (con't)

361 -----+-----+-----+-----+-----+ 420

CCAGTGGCAGAGGAGTCCACCTCCGCCAAGTCCGCCCTCCACCGAGACCGCCACCGCCTAG

G	H	R	L	L	R	W	R	R	F	R	R	R	W	L	W	R	W	R	I	-
V	T	V	S	S	G	G	G	G	S	G	G	G	S	G	G	G	G	G	S	-
S	P	S	P	Q	V	E	A	V	Q	A	E	V	A	L	A	V	A	D	R	-

B																				
	Bs																			
	sp																			
H	CBi1	B																		
i	A	T	AvaH2DFSS																	
n	l	a	linK8doaa																	
4	w	q	uJIA6ekcx																	
I	I	I	IIIIIIII																	
			/ / / /																	

GGACATCGAGCTCACTCAGTCTCCATCCCTCTGTATCTCTAGGAGACAGAGTCAC

421 -----+-----+-----+-----+-----+ 480

CCTGTAGCTCGAGTGAGTCAGAGTAGGAGGAAAGACATAGAGATCCTCTGTCTCAGTG

G	H	R	A	H	S	V	S	I	L	L	F	C	I	S	R	R	Q	S	H	-
D	I	E	L	T	Q	S	P	S	S	F	S	V	S	L	G	D	R	V	T	-
T	S	S	S	L	S	L	H	P	P	F	L	Y	L	*	E	T	E	S	P	-

C																				
P	v	M																		
le	i	n																		
e	R	l																		
I	I	I																		

CATTACTTGCAGGCAAGTGAGGACATATATAATCGGTTAGCCTGGTATCAGCAGAAACC

481 -----+-----+-----+-----+-----+ 540

GTAATGAACGTTCCGTTCACTCCTGTATATATTAGCCAATCGGACCATAGTCGTCTTGG

H	Y	L	Q	G	K	*	G	H	I	*	S	V	S	L	V	S	A	E	T	-
I	T	C	K	A	S	E	D	I	Y	N	R	L	A	W	Y	Q	Q	K	P	-
L	L	A	R	Q	V	R	T	Y	I	I	G	*	P	G	I	S	R	N	Q	-

A	B	C																		
vBss	v	M																		
rfat	i	s																		
IaJy	J	e																		
III	I	I																		

///

AGGAAATGCTCCTAGGCTCTTAATATCTGGTGCAACCAGTTGGAAACTGGGGTTCCCTC

541 -----+-----+-----+-----+-----+ 600

TCCTTTACGAGGATCCGAGAATTATAGACCACTGTCACCAACCTTGACCCCAAGGAAG

R	K	C	S	*	A	L	N	I	W	C	N	Q	F	G	N	W	G	S	F	-
G	N	A	P	R	L	L	I	S	G	A	T	S	L	E	T	G	V	P	S	-
E	M	L	L	G	S	*	Y	L	V	Q	P	V	W	K	L	G	F	L	Q	-

H																				
it	T	Ba	T																	
nf	S	suds	A																	
	P	t3pp	I																	

fi

R YAnR w

e7 sI r

FIG. 6 (con't)

II VI IIII I II II I

/ / / / / / /

601 AAGATTCACTGGCAGTGGATCTGAAAGGATTACACTCTCAGCATTACCAAGTCITCAGAC
 TTCTAAGTCACCGTCACCTAGACCTTCCTAAATGTGAGAGTCGTAATGGTCAGAAGTCTG 660

K I Q W Q W I W K G L H S Q H Y Q S S D -
 R F S G S G S G K D Y T L S I T S L Q T -
 D S V A V D L E R I T L S A L P V F R L -

M	E	H			
b	c	i	U	M	A
o	o	n	Rsb	a	v
I	5	c	sca	BM	a
I	7	i	aac	e	i
I	I	r	III	I	I

// /

661 TGAAGATGTTGCTACTTATTACTGTCAACAGTATTGGAGTACTCCTACGTTGGAGG 720
 ACTTCTACAACGATGAATAATGACAGTTGTCATAACCTCATGAGGATGCAAGCCACCTCC

* R C C Y L L L S T V L E Y S Y V R W R -
 E D V A T Y Y C Q Q Y W S T P T F G G G -
 K M L L L I T V N S I G V L L R S V E G -

S		H	
Na	C	B	B B C BB Ga
lu	Av	S	s AsEvAsxEdeNTT
a9	j	m	c coaicioaiIoa
I6	e	wJ	G ifeJieFgIIItuu
VI	I	II	I IIIIIIIIIIIII

/ / / / / /

721 GACCAAGCTGGAAATCAAACGGGOGGCCGC 750
 CTGGTTCGACCCTTAGTTGCCCGCCGGCG

D Q A G N Q T G G R -
 T K L E I K R A A -
 P S W K S N G R P -